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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/717,515	11/21/2003	Yosuke Oyama	OYAMA2	8401
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EXAMINER

HUSON, MONICA ANNE

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,515

Applicant(s)

OYAMA, YOSUKE

Examiner

Monica A. Huson

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the Amendment filed 7 June 2006.
Due to applicant's amendment, the previous rejections are withdrawn.

Election/Restrictions

Claim 6 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected product, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7 June 2006.

Applicant's election with traverse of Group I in the reply filed on 7 June 2006 is acknowledged. The traversal is on the ground(s) that claim 5 should be maintained with the process since it is a product-by-process claim. This is not found persuasive because the specifics to examine a process, namely the stepwise claim limitations and the material undergoing a change in physical or chemical state, are not required when examining an apparatus, which is limited only by structural limitations. Although a process claim may contain article limitations, they are only given patentable weight as to how the structure of the article affects the process. Similarly, the specifics of an article do not require the same consideration of stepwise process limitations as in a process claim but rather only the structure of the article.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braun et al. (U.S. Patent 6,180,275), in view of Uda et al. (U.S. Patent 4,489,033), further in view of Kwak (U.S. Patent 5,501,587). Regarding Claim 1, Braun et al., hereafter "Braun," show that it is known to carry out a fuel cell separator molding method for molding an electrically conductive material (Abstract) comprising shaping molding material containing electrically conductive material in a die of any desired geometry (Abstract; Column 5, lines 50-52; It is being interpreted that Braun's teaching of any desired geometry would suggest the claimed cavity which forms a plurality of fuel cell separators at one time.). Braun does not give specific molding steps. Uda et al., hereafter "Uda," show that it is known to carry out a molding method comprising providing a stationary die with a cavity having a variable volume and a molding portion in the cavity (Figure 1, element 3); providing a stationary die with a movable die for cooperation with the cavity (Figure 1, element 5); supplying the material having poor flowability to the cavity (Figure 2; Column 3, lines 26-29), and after or while the material is supplied to the cavity, moving the movable die toward the stationary die to reduce the volume of said cavity (Figure 4). Uda and Braun are combinable because they are concerned with a similar technical field, namely, methods of injection and/or compression molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Uda's specific molding steps to carry out Braun's general molding teaching in order to properly form the molded article. Braun also does not show providing a die having a plurality of plate-like separator molding portions that are co-planar in relationship to one another. Kwak shows that it is known to carry out a method of molding using a plurality of plate-like separator molding portions that are disposed in a co-planar relationship to one another, wherein adjacent

separator molding portions of said plurality of plate-like separator molding portions define therebetween connection portion ribs which during molding produce thin walled excess portions between adjacent molded co-planar fuel cell separators (Figure 1). Kwak and Braun are combinable because they are concerned with a similar technical field, namely, methods of injection molding conductive articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Kwak's mold configuration during Braun's molding method in order to produce the desired article in the desired quantity.

Regarding Claim 2, Braun shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the electrically conductive material is supplied to said cavity from one supply means and is compression molded (Abstract), meeting applicant's claim.

Regarding Claim 3, Braun shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the electrically conductive material is supplied to the cavity from an injection device (Abstract), but he does not show specific injection molding details. Uda shows that it is known to carry out a method wherein the molding material having poor flowability is supplied directly through a gate portion only or through a sprue portion and the gate portion only, and is injection compression molded (Figures 2-4; Column 3, lines 26-29). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Uda's specific molding steps to carry out Braun's general molding teaching in order to properly form the molded article.

Regarding Claim 4, Braun shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the electrically conductive material is a melted resin material containing 60-95% by weight of an electrically conductive filler (Column 4, lines 41-49; It is interpreted that

since Braun meets the composition requirements, his material will have the claimed poor flowability), meeting applicant's claim.

Regarding Claim 7, Braun shows the process as claimed as discussed in the rejection of Claim 3 above, including a method wherein the molding die is of any desired geometry (Abstract; Column 5, lines 50-52; It is being interpreted that Braun's teaching of any desired geometry would suggest the claimed cavity which forms a plurality of fuel cell separators at one time.), and the electrically conductive material having poor flowability is supplied to a cavity from an injection device (Abstract; Figure 1, element 10). Braun does not show specific molding details. Uda shows that it is known to carry out a method wherein said cavity having a variable volume is disposed in a substantially horizontal orientation which extends horizontally from a centrally disposed inlet to the cavity from the injection device, the inlet device being spaced in the middle of the molding portion (Figures 1-4; It is noted that the drawings show the claimed orientation when viewed from the long side of a letter-sized paper.). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Uda's specific molding details to carry out Braun's general molding teaching in order to properly form the molded article.

Regarding Claim 8, Braun shows the process as claimed as discussed in the rejection of Claim 7 above, including a method wherein the electrically conductive material comprises a melted resin material containing a major portion of conductive particles (Abstract; Column 4, lines 58-61; Column 5, lines 59-61), meeting applicant's claim.

Regarding Claim 9, Braun shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not specifically show die characteristics. Kwak shows that it is known to carry out a method comprising providing a stationary die with a bottom portion forming surface which is movable upon completion of said molding, and withdrawing said movable die

and moving the bottom portion forming surface of said fixed die upwardly to eject the molded fuel cell separators (Column 2, lines 23-46). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Kwak's specific mold configuration during Braun's molding process in order to insure efficient mold movement.

Regarding Claim 10, Braun shows the process as claimed as discussed in the rejection of Claim 3 above, but he does not specifically show using a mold comprising four separator molding portions. However, to be entitled to weight in method claims, recited structural limitations must affect the method in a manipulative sense and not amount to mere claiming of a use of a particular structure. *Ex parte Pfeiffer* 135 USPQ 31. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use any desired mold configuration in Braun's molding process in order to produce the desired article in the desired quantity.

Regarding Claim 11, Braun shows the process as claimed as discussed in the rejection of Claim 10 above, but he does not show specific initial cavity volumes or removable die speeds. Uda shows that it is known to carry out a method wherein the initial volume of the cavity is 100% larger than the final volume of the cavity (Column 2, lines 42-61). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Uda's specific initial cavity volume during Braun's molding process in order to properly compress the molded article. Braun also does not show removable die speeds. However, it is well established that proportions or values are critical only when they involve difference in kind rather than in degree. (See *In re Touvay et al.* 121 USPQ 265) Therefore, It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use any appropriate die speed during Braun's molding process in order to properly compress the molded article.

Regarding Claim 12, Braun shows the process as claimed as discussed in the rejection of Claim 3 above, but he does not show a specific injection direction. Uda shows that it is known to carry out a method wherein said plurality of separator molding portions of said cavity are provided with a plurality of grooves and ridges which extend in the same direction, and said material having poor flowability is injected into said cavity in a direction parallel to said grooves and ridges (Figure 2; It is interpreted that the cavity geometry includes grooves and ridges at its perimeter.). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Uda's specific injection direction during Braun's molding process in order to avoid deformation of the molded article during the molding process.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braun, in view of Uda and Kwak, further in view of Adell (U.S. Patent 4,239,724). Braun shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show ejection of the co-planar articles and separating them from one another. Adell shows that it is known to carry out a method for molding co-planar articles including ejecting the co-planar plurality of articles from the cavity, and separating the fuel cell separators from one another (Column 3, lines 5-42; Column 4, lines 27-40). Adell and Braun are combinable because they are concerned with a similar technical field, namely, methods of injection molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Adell's ejection process during Braun's molding process in order to properly eject the molded articles without any damage thereto.

Response to Arguments

Applicant's arguments with respect to claims 1-4, 7, and 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Huson whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 6:45am-3:15pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monica A Huson

August 21, 2006


CHRISTINA JOHNSON
PRIMARY EXAMINER

8/21/06